

October 15, 2004

Rule 37 Case No. 0236368

APPLICATION OF HANSON PRODUCTION COMPANY FOR AN EXCEPTION TO STATEWIDE RULE 37 TO DRILL ITS NO. 2-ST WELL, T.P. RANCH LEASE, SOUR LAKE, E. (PRICE), SOUR LAKE, E. (YEGUA DF-9), SOUR LAKE, E. (YEGUA #4) AND WILDCAT FIELDS, HARDIN COUNTY, TEXAS.

APPEARANCES:

FOR APPLICANT:

Mike McElroy
Neil E. Hanson
George Jochetz
Terry Payne
Dave Cook

APPLICANT:

Hanson Production Company
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FOR PROTESTANT:

Philip Patman
Rick Johnston
Todd Reynolds

PROTESTANT:

Crown Petroleum Corporation
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“ ”

FOR OBSERVERS:

Glenn Johnson
Bill Spencer
George Neale
Matt Scott

OBSERVER:

Samson Lone Star, L.P.
“ ”
Black Stone Minerals Company, L.P.
Texas General Land Office

PROPOSAL FOR DECISION

PROCEDURAL HISTORY

APPLICATION FILED:

September 15, 2003

NOTICE OF HEARING:

December 1, 2003

HEARD BY:

Mark Helmueller - Hearings Examiner
Margaret Allen - Technical Examiner

HEARING DATES :

May 24 - 27, and June 17, 2004

RECORD CLOSED:

July 9, 2004

PFD CIRCULATION DATE:

October 15, 2004

STATEMENT OF THE CASE

Hanson Production Company (“Hanson” or “Applicant”), seeks an exception to Statewide Rule 37 to drill its proposed T.P. Ranch Well No. 2-ST in the Sour Lake, E. (Price) and Sour Lake, E. (Yegua #4) Sour Lake, E. (Yegua DF-9) and Wildcat Fields (“subject fields”), Hardin County, Texas. The subject fields have minimum lease line spacing requirements of 467 feet to the nearest lease line and 1200 feet minimum spacing between wells. The subject lease is an irregularly shaped 392 acre tract.

The proposed well will be directionally drilled to a bottomhole location 50 feet south of the northern lease line. The proposed well will be located 455 feet from the T.P. Ranch Well No. 1U and 1L, (“T.P. Ranch No. 1”) a dual completion wellbore, which is currently producing only from upper perforations in the Sour Lake, E. (Price) Field. The T.P. Ranch No. 1 is at a regular location. Hanson has agreed to shut-in the T.P. Ranch No. 1 if the permit for the T.P. Ranch No. 2-ST is approved in the applied-for fields. A copy of the plat submitted by Hanson with the Form W-1 (Application for Permit to Drill, Deepen, Plug Back, or Re-Enter) is attached.

The applications are protested by Crown Petroleum Corporation (“Crown”). Crown is the operator of the offset tract located to north of the T.P. Ranch Lease. Samson Lone Star, L.P. (“Samson”), Black Stone Minerals Company, and the Texas General Land Office appeared as observers.

A consolidated hearing was held in this case with Oil & Gas Docket No. 03-0236417 which involves an application filed by Crown for a Productive Acreage Determination and Proposed Field Rules in the Sour Lake, E. (Price) Field; and Oil & Gas Docket No. 03-0238718 Complaint by Crown regarding the proper field designation for Hanson’s T.P Ranch No. 1. These two dockets are the subject of a separate proposal for decision.

SUMMARY OF UNDISPUTED EVIDENCE

The Sour Lake, E. (Price) Field (“Price field”) was discovered in May 1999, with the completion of the T.P. Ranch No. 1. A downdip well in the field, the Black Stone “A” No. 1R (“Black Stone No. 1-AR”) was completed in 2000. The third well in the field is Crown’s recently completed Black Stone Gas Unit No. 3 (“Black Stone No. 3”). A fourth well drilled to a deeper formation by Samson also penetrates the Price field.

The Price field is located in a structural trap downthrown from a major fault to the northwest. The location of this boundary fault is known from 3D seismic and fault cuts in various area wells. The field’s other boundaries are downdip oil/water contacts. Both Crown and Hanson agree that the productive interval is

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composed of two sand members, (hereinafter the “Upper Price” and “Lower Price” sands) separated by a thin section of shale. The parties also agree that one of the drive mechanisms for both sands is a water drive. Crown believes that both sands should be carried in the Sour Lake, E. (Price) Field. Hanson believes that the two sands should be treated as separate fields, with the Upper Price sand designated as the Sour Lake, E. (Price) Field and the Lower Price sand designated as the Sour Lake, E. (Yegua #4) Field or a new field.

The T.P. Ranch No. 1 was initially perforated in the Upper Price sand at elevations between -10,849 feet and -10,859 feet.¹ The new field designation filed with this well defined the top and bottom of the Price field as the perforated interval. This interval excludes the Lower Price sand and the lowest portions of the Upper Price sand. The initial potential was 431 BOPD, with no water and a gas/oil ratio of 364 cubic feet per barrel. The T.P. Ranch No. 1 produced 507,000 barrels of oil and 294 MMCF of gas by early 2004.

The initial reservoir pressure for both the Upper Price and Lower Price sands was 6220 psi². By the time the Black Stone No. 1-AR was completed in the Upper Price sand, the reservoir pressure had dropped to an average of 5395 psi in the Upper Price sand and 5750 psi in the Lower Price sand.

In February 2004, Crown successfully drilled and completed the Black Stone No. 3 in both the Upper Price sand and the Lower Price sand. The Black Stone No. 3 has already produced 63,000 BO and 48 MMCF of gas. The Black Stone No. 3 is updip from the T.P. Ranch No. 1.

In response to Crown’s perforation of the Black Stone No. 3 in both the Upper Price and Lower Price sand, Hanson reconfigured the T.P. Ranch No. 1 well as a dual completion with separate production strings. The workover was reportedly completed in February 2004. The T.P. Ranch No. 1U is currently producing from the perforations in the Upper Price sand on gas lift at a rate of 110 BOPD. No allowable has yet been assigned to the T.P. Ranch No. 1L which Hanson reports is perforated in the Lower Price sand.

HANSON’S POSITION AND EVIDENCE

Hanson claims it is entitled to a well with a bottomhole location 50 feet from the lease line in order to prevent confiscation. Hanson contends that both the Upper Price sand and the Lower Price sand are present at locations on the T.P. Ranch Lease updip of its T.P. Ranch No. 1 wellbore. Hanson claims that a completion in both sands at the proposed location is necessary to recover its fair share of the reserves underlying its lease which will not be recovered by its current well due to the downdip location.

Hanson believes that water has already intruded into the perforations in the Upper Price sand in the T.P. Ranch No. 1U as shown by the increased production of water. Hanson believes that the oil/water contact is also at or near the bottom of the perforated interval in the Lower Price sand in the T.P. Ranch No. 1L.

¹All reported depths are the calculated true vertical depth for these directionally drilled wells.

² All reported pressures are corrected to a common datum of -10,875 feet.

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Hanson further contends that the performance of the Black Stone No. 1-AR after the oil/water contact reached the perforations in that well is illustrative of what will happen in the very near future in the T.P. Ranch No. 1 wellbore in both sands. Hanson argues that as soon as the oil/water contact was in the perforated interval, the Black Stone No. 1-AR went to 95% water cut, and became uneconomical to produce. Hanson did not estimate the remaining recoverable reserves underlying the T.P. Ranch Lease for the Lower Price sand, the Upper Price sand, or the cumulative total for both sands.

Hanson and Crown differ on whether the Upper Price and Lower Price sands can be produced as separate fields. Hanson argues that it is possible to isolate the production from each sand and that they should be treated as separate fields each of which would therefore require a separate exception to Statewide Rule 37. In support of this argument, Hanson argues that it successfully recompleted the T.P. Ranch No. 1 to isolate the Upper Price sand from the Lower Price sand. Hanson set separate production strings, installed a packer between the two sand members and perforated the Lower Price sand between elevations of -10,890 feet and -10,894 feet. After the separate completions, Hanson reported the static reservoir pressure in the Upper Price sand to be 5083 psi and in the Lower Price sand to be 4968 psi. Hanson further noted that the flowing pressure of 4591 psi in the Upper Price sand is significantly different from the flowing pressure in the Lower Price sand of 2703 psi. Hanson believes these flowing pressures prove that the Upper Price sand and Lower Price sand can be successfully isolated and produced separately.

Hanson also cites the different producing characteristics of the Upper Price and Lower Price sands in its T.P. Ranch No. 1 as further evidence that the two sand members are separate reservoirs. Early in January 2004, before the workover, the T.P. Ranch No. 1 produced about 250 barrels of fluid per day at a water cut of 26%. After the workover, oil production has declined. Between early April and late May, the daily oil production from the Lower Price sand declined from 180 to 75 barrels, while the water cut increased from 20% to 40%. The daily oil production from the perforations in the Upper Price sand ranged from 35 barrels to zero, while the water cut fluctuated from 50 to 100%.

CROWN'S POSITION AND EVIDENCE

Crown contends that Hanson's current application is premature because it is still capable of recovering its fair share of reserves from its existing T.P. Ranch No. 1 well at a regular location in both the Upper Price and Lower Price sands. Crown argues that the possibility of future drainage is irrelevant, as the application must be based on the current recoverable reserves, which Hanson failed to estimate.

Crown believes that the T.P. Ranch No. 1 previously produced from both the Upper Price and Lower Price sands, even though the well was only perforated in the Upper Price sand. Crown relies on three facts to support this position: 1) the oil/water contacts in both the Upper Price sand and Lower Price sand rose before any well was actually completed in the Lower Price sand; 2) the cement bond log in the T.P. Ranch No. 1 does not establish the presence of cement behind the pipe in the wellbore which would isolate the Upper Price sand from the Lower Price sand and 3) neither the Black Stone No. 1-AR or the Black Stone No. 3 encountered virgin reservoir pressure when the Lower Price sand was tested.

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With respect to the oil/water contact, Crown agrees with Hanson that at original conditions the Upper Price sand and the Lower Price sand had different oil-water contacts. Both Crown and Hanson agree that the original oil/water contact in the Lower Price sand was approximately -10,905 feet and is currently at -10,890. However, the parties disagree on the original and current oil/water contact in the

Upper Price sand.³ Crown urges that there could not have been any movement in the oil/water contact in the Lower Price sand before any other well was completed and perforated in that interval unless the T.P. Ranch No. 1 well was in fluid communication with the Lower Price sand.

Similarly, Crown points to the depletion in pressure of the Lower Price sand from virgin reservoir conditions as a further indication that the T.P. Ranch No. 1 well was producing from both the Upper Price sand and the Lower Price sand, even though the well was only perforated in the Upper Price sand. Original reservoir conditions reported that the pressure in the Lower Price sand was 6220 psi. By the time the Black Stone No. 1-AR was tested in the Lower Price sand, the reservoir pressure had dropped to 5750 psi.

Crown believes that the fact that the T.P. Ranch No. 1 produced from both the Upper Price sand and the Lower Price sand shows that the T.P. Ranch No. 1 well is capable of recovering Hanson's fair share of the remaining recoverable reserves in both the Upper Price and Lower Price sand. Crown provided support for this contention by estimating the current recoverable reserves underlying the T.P. Ranch Lease in both the Upper Price and Lower Price sand and comparing the estimated cumulative production to this estimate using production reports from both before and after the workover.

Crown estimated that the current recoverable reserves in both the Upper Price sand and the Lower Price sand on the T.P. Ranch Lease total 198,000 barrels. The estimated cumulative production of the T.P. Ranch No. 1 well using production reported prior to the workover is 393,000 barrels. Crown emphasized that the recent production history for the T.P. Ranch No. 1 may be explained as an inefficient attempt to recompleat the well and isolate any communication between the two producing zones. Crown noted that the recompleat turned the T.P. Ranch No. 1 from a well producing at the top allowable with a 30% water cut, to a well with significant water production. Crown believes that the continued production of the T.P. Ranch No.1 without a workover would have allowed Hanson to recover significantly more than its fair share of the remaining recoverable reserves underlying the T.P. Ranch Lease in the both the Upper Price and Lower Price sands. Crown therefore argues that it is appropriate to use the production reported for the well prior to the workover in determining the potential future performance of the T.P. Ranch No. 1 well.

³ According to Crown, the upper Price sand had an original oil/water contact at -10,880 feet, which has now moved up to -10,865 feet. In support of this, Crown cites the T.P. Ranch No. 1 which is producing 25% water and whose bottom perforation in the upper member is at -10,865 feet and the Black Stone No. 1-AR which produces 95% water and whose bottom perforation is at -10,864 feet. Hanson disagrees with this interpretation and places both the original and current oil/water contacts in the Upper Price sand 10 feet deeper.

Alternatively, Crown argued that even if the future production of the T.P. Ranch No. 1 well is at the post-workover levels, that ultimate production will still exceed the remaining recoverable reserves. Assuming that the T.P. Ranch No. 1 produces at the last reported rate of 110 BOPD from both sets of perforations, the cumulative recovery will be 216,800 barrels, which exceeds the estimate of the current remaining recoverable reserves.

EXAMINERS' OPINION

To establish entitlement to an exception to Rule 37 to prevent confiscation, an applicant must show that, absent the applied-for well, it will be denied a reasonable opportunity to recover its fair share of hydrocarbons currently in place under the lease, or its equivalent in kind. The applicant must satisfy a two pronged test: 1) the applicant must show that it will not be afforded a reasonable opportunity to recover its fair share of hydrocarbons currently in place by drilling a well at a regular location; and 2) the applicant must show that the proposed irregular location is reasonable. Applicant does not claim that it is entitled to an exception based on waste. Additionally, Applicant presented no evidence to support an exception to Rule 37 in either the Sour Lake, E. (Yegua DF-9) or the Wildcat Fields.

It is the basic right of every landowner or lessee to a fair and reasonable chance to recover the oil and gas under their property as recognized by the Texas Supreme Court in *Gulf Land Co. v. Atlantic Refining Co.*, 131 S.W.2d 73, 80 (Tex. 1939). Denial of that fair chance is confiscation within the meaning of Rule 37. *Id.*

Because regular locations within both the Upper Price and Lower Price sands are present on Hanson's T.P. Ranch Lease, the critical issue in determining whether Rule 37 exceptions should be granted is whether Hanson can recover its fair share of reserves from its existing well at a regular location.

The parties agree and the evidence establishes that both the Upper Price and Lower Price sands are under the influence of a water drive. However, Hanson argues that because the T.P. Ranch No. 1 is downdip of its lease line in a water drive influenced reservoir, it is therefore entitled to the requested exceptions. This argument is specious. Establishing the influence of the water drive does not automatically entitle Hanson to the requested exceptions to protect the correlative rights for any updip reserves underlying its lease. To justify an exception to Rule 37, Hanson must also show that it will not be afforded a reasonable opportunity to recover its fair share of oil under current conditions.

In this instance, Hanson was required to show that the continued production of the T.P. Ranch No. 1 well would not recover its fair share of the remaining recoverable reserves underlying its lease. Hanson did not attempt to address this issue by estimating the remaining recoverable reserves or the estimated cumulative recovery of the T.P. Ranch No. 1 well. It simply argued that future conditions would leave reserves updip of the T.P. Ranch No. 1 well without quantifying the amounts.

Hanson's position ignores the holding in *Railroad Commission v. Texas Company*, 298 S.W.2d 666,668 (Tex.Civ.App. Austin - 1957, writ ref'd n.r.e.) which requires an exception to Rule 37 be based on **current** conditions in the field. In other words an exception to Rule 37 may not be based on a future **possibility**, instead an applicant must provide evidence that it will not be afforded an opportunity to recover its fair share of the reserves **currently** in place. Speculation that Hanson may be entitled to an exception in the future does not establish that it requires an exception to recover its fair share of the current estimated recoverable reserves underlying the T.P. Ranch Lease.

Hanson did not present any evidence estimating the current recoverable reserves which underlie the T.P. Ranch Lease in the Upper Price sand and Lower Price sand. However, Crown presented evidence that the T.P. Ranch No. 1 would recover **more** than the current estimate of the remaining recoverable reserves underlying the T.P. Ranch Lease regardless of whether the production data preworkover or postworkover was used. Under Crown's decline curve analysis, using the most recent production information for the T.P. Ranch No. 1, the cumulative recovery from the well will exceed the current remaining recoverable reserves underlying Hanson's lease.

Additionally, the examiners question Hanson's assertion that the T.P. Ranch No. 1 will soon become noneconomic as it is based on the performance of a down dip well instead of the five year production history for the T.P. Ranch No. 1. Hanson argued that because it changed the well configuration of the T.P. Ranch No. 1 well that the future performance of the well should be measured by the performance of the Black Stone No. 1-AR which went to a 95% water cut, and became uneconomical to produce after the oil/water contact reached the perforated interval. The examiners are not convinced that the future performance of the T.P. Ranch No. 1 will mirror the Black Stone No. 1-AR. Because the performance history for the T.P. Ranch No. 1 is limited by the workover operations, it is not possible to predict that the T.P. Ranch No.1 well has approached the end of its economic life as asserted by Hanson. Further, Hanson has failed to establish that it is currently entitled to an exception to Statewide Rule 37 for either the Upper Price sand or the Lower Price sand or any other applied-for field. The examiners therefore recommend that the application be denied.

Finally, the examiners conclude that the T.P. Ranch No. 1 well historically was drawing from both sands, even though it was only perforated in the Upper Price sand, as the movement of the oil/water contact and depletion of pressure in the Lower Price sand cannot be explained by any other activity in the field. Additionally, as currently configured, the T.P. Ranch No. 1 well is capable of producing reserves from both the Upper Price sand and the Lower Price sand. Accordingly, regardless of the which field or fields the recompleted well is assigned into, it would appear that the T.P. Ranch No. 1 well provides Hanson with the opportunity to recover its fair share of reserves from both the Upper Price sand and the Lower Price sand.

Based on the record in these dockets, the examiners recommend adoption of the following Findings of Fact and Conclusions of Law:

FINDINGS OF FACT

1. At least 10 days notice of this hearing was given to the designated operator, all offset operators, all lessees of record for tracts that have no designated operator, and all owners of record of unleased mineral interests for each affected adjacent tract.
2. Hanson Production Company (“Hanson” or “Applicant”), seeks an exception to Statewide Rule 37 to drill its No. 2-ST Well, T.P. Ranch Lease, in the Sour Lake, E. (Price), Sour Lake, E. (Yegua #4), Sour Lake, E. (Yegua DF-9) and Wildcat Fields (“subject fields”) in Hardin County.
3. The subject fields have minimum lease line spacing requirements of 467 to the nearest lease line and 1200 feet minimum spacing between wells. The subject lease is an irregularly shaped 392 acre tract which has locations regular to lease-lines.
4. The well is to be directionally drilled to a proposed bottomhole location 50 feet south of the northern lease line. The proposed well is located 455 feet from Hanson T.P. Ranch No. 1 well, which is currently permitted and producing from the subject fields at a regular location. Hanson has agreed to shut-in the T.P. Ranch No. 1 Well if the permit for the T.P. Ranch No. 2-ST is approved.
5. The applications are protested by Crown Petroleum Corporation (“Crown”). Crown is the operator of the offset tracts located to the east and north of the subject lease.
6. The Sour Lake, E. (Price) Field (“Price field”) was discovered in May 1999, with the completion of the T.P. Ranch No. 1. A downdip well in the field, the Black Stone “A” No. 1R (“Black Stone No. 1-AR”) was completed in 2000. The third well in the field is Crown’s recently completed Black Stone Gas Unit No. 3 (“Black Stone No. 3”). A fourth well drilled to a deeper formation by Samson also penetrates the Price field.
7. The Price field is located in a structural trap downthrown from a major fault to the northwest. The location of this boundary fault is known from 3D seismic and fault cuts in various area wells. The field’s other boundaries are downdip oil/water contacts. Both Crown and Hanson agree that the productive interval is composed of two sand members, (hereinafter the “Upper Price” and “Lower Price” sands) separated by a thin section of shale. The parties also agree that the drive mechanism for both sands is a water drive.
8. The initial reservoir pressure for both the Upper Price and Lower Price sands was 6220 psi. By the time the Black Stone No. 1-AR was completed in the Upper Price sand, the reservoir pressure had dropped to an average of 5395 psi in the Upper Price sand and 5750 psi in the Lower Price sand.
9. In February 2004, Crown successfully drilled and completed the Black Stone No. 3 in both the Upper Price sand and the Lower Price sand. The Black Stone No. 3 has already produced 63,000 BO and

48 MMCF of gas. The Black Stone No. 3 is updip from the T.P. Ranch No. 1.

10. In response to Crown's perforation of the Black Stone No. 3 in both the Upper Price and Lower Price sand, Hanson reconfigured the T.P. Ranch No. 1 as a dual completion with separate production strings. The workover was reportedly completed in February 2004. The T.P. Ranch No. 1U is currently producing from the perforations in the Upper Price sand on gas lift at a rate of 110 BOPD. No allowable has yet been assigned to the T.P. Ranch No. 1L which Hanson reports is perforated in the Lower Price sand.
11. Hanson's T.P. Ranch No. 1 well is at a regular location on the T.P. Ranch Lease.
12. The T.P. Ranch No. 1 well provides Hanson with a reasonable opportunity to recover the reserves currently underlying the T.P. Ranch Lease in the Upper Price sand and the Lower Price sand.
 - A. The current recoverable reserves in both the Upper Price sand and the Lower Price sand on the T.P. Ranch Lease total 198,000 barrels.
 - B. Assuming that the T.P. Ranch No. 1 well produces at the last reported rate of 110 BOPD, using decline curve analysis, the cumulative recovery from the well will be 216,800 barrels, which exceeds the estimated current remaining recoverable reserves.
 - C. As currently configured, the T.P. Ranch No. 1 well is capable of producing reserves from both the Upper Price sand and the Lower Price sand.

CONCLUSIONS OF LAW

1. Proper notice of hearing was timely given to all persons legally entitled to notice.
2. All things have occurred to give the Commission jurisdiction to decide this matter.
3. Hanson failed to prove that wells at locations regular to lease lines will not provide it with a reasonable opportunity to recover the reserves currently in place under the T.P. Ranch Lease.
4. An exception to Statewide Rule 37 at the applied-for location is not necessary to prevent confiscation.

RECOMMENDATION

Hanson failed to establish that it is entitled to a Rule 37 exception in order to prevent confiscation. The examiners therefore recommend that the subject application be denied in accordance with the attached final order.

Respectfully submitted,

Mark J. Helmueller
Hearings Examiner

Margaret Allen
Technical Examiner